IR-1569

M. A. / M. Sc. (Third Semester) Examination, Dec. 2021

MATHEMATICS

Paper : First (Optional Group-VI) (I)

(Fundamental of Computer Science)

Time Allowed : Three hours

Maximum Marks : 25

Note : Attempt questions of all **two** sections as directed. Distribution of marks is given with sections.

Section-'A'

(Short Answer Type Questions)   5×2=10

Note : Attempt all the five questions. **One** question from each unit is compulsory. Each question carries 02 marks.

[2]

Unit-I

1. Explain object in C++ tokens with example.

Or

Write any four C++ token with example.

Unit-II

2. What do you mean Identifier? Give an example.

Or

Differentiate between constant and variable with an example in C++.

Unit-III

3. Explain overloading operator and operator precedence with example.

Or

Define switch statement and do-while statement.

Unit-IV

4. Explain the need for prototype function in C++.

Or

Define the main function and inline function with an example.

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Unit-V

5. Explain two class of specification and give the general form of a class declaration.

Or

Define Array within a class and give an example.

Section-'B'

(Long Answer Type Questions)   5×3=15

Note : Attempt all the five questions. One question from each unit is compulsory. Each question carries 03 marks.

Unit-I

6. What is Object Oriented Programming? How is it different from the procedural oriented programming?

Or

What are the different forms of inheritance? Give an example at each.

Unit-II

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7. Explain Basic Data types and user defined data types and also define their merits and demerits.

Or

What are the applications of void data types in C++?

Unit-III

8. Write a program in C++ to print the following output using loop :

```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

Or

Write a programs to explain the use of the switch statement and do the do...while statement.

Unit-IV

9. What is the main function and call by reference? Why do we need call by reference with suitable program?

Or

What do you mean by function overloading and write a suitable program for same.

Unit-V

10. Construct a base class and its derived classes with their characteristics for the following class hierarchy :

Permanent → Staff ← Temporary

Manager   Clerk   Peon   Contractual   Daily wages
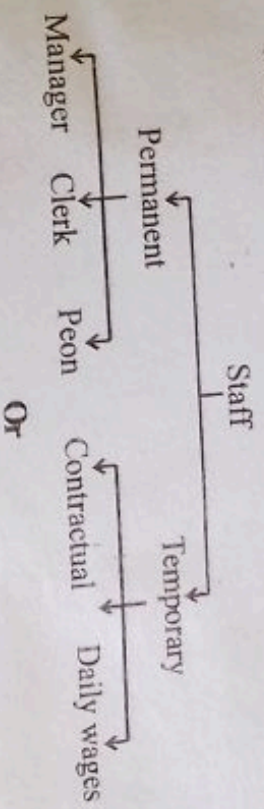
Or

Explain static data members and static members functions and differentiate between them with suitable program.